

REMARKS/ARGUMENTS

Claims 1-12 are pending in this application. Claims 1, 4 and 8 have been amended.

Claims 1, 4 and 8 were rejected for missing antecedents. The claims have been amended to provide the antecedents. In view thereof, the retraction of this rejection is requested.

Claims 1 and 7-12 were rejected for anticipation by Braune (US 2003/0062469) because, amongst others, Braune was viewed as disclosing that “as the first tool part moves in the closing direction, the protected zone is correspondingly reduced in the closing direction and so that during further movements of at least one of the first and second tool parts the entire opening gap is within the protected zone (Paragraph 0044)”.

Amended claim 1 now recites “continuously reducing the size of the protected zone ... so that during subsequent closing movements ... substantially the entire opening gap is within the protected zone”. Claim 8 is similarly limited and differs from claim 1 only in that claim 8 employs apparatus terminology.

Braune discloses a sensor which moves with the first (upper) tool part. A protected zone is formed beneath the tool part and has the shape of a semicircular surface that extends around the lowermost point of the tool part. This protected zone is only active as long as the tool moves relatively fast during a first phase. In a second phase which begins just before the tool reaches its actual operating point (at which a deformation of the workpiece begins), the sensor is deactivated and protection for workers in the vicinity of the tools is provided by the reduced speed of the tool part.

Paragraph [0044] of Braune relied upon in the anticipation rejection of independent claims 1 and 8 teaches that when the protected zone is interrupted, the press is switched off and movement of the upper tool part 11 is stopped. Braune contains no disclosure concerning a reduction of the protected zone in the closing direction as the opening gap between

the tool parts becomes smaller. Paragraph [0056] of Braune expressly teaches that there is no reduction of the protected zone in the closing direction as required by claims 1 and 8:

As soon as the upper tool 11 and the monitored zone 29 have reached the location shown in FIG. 1b, a switch is made from the fast closing movement 15 to a comparatively slow working movement by which the workpiece 25 should be shaped. At the same time, the monitoring is deactivated. The protection of the operator is now realized by the slow closing movement or working movement. (underlining added)

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631; 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, for anticipation the “identical invention must be shown in as complete detail as is contained in the ... claim”. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236; 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). MPEP §2131.

In distinction to Braune, and in particular paragraph [0056] thereof, the present application discloses (e.g. paragraph [0007]) and claims 1 and 8 require that when the size of the opening gap in the movement direction becomes smaller than the protected zone in the movement direction due to the fact that the lower boundary of the protected zone reaches and moves below the upper edge of the second or lower tool part, the extent of the protected zone in the direction of tool movement is continuously reduced. This is not disclosed or in any manner suggested by Braune.

Accordingly, for at least this reason Braune does not anticipate independent claims 1 and 8, including dependent claims 7 and 9-12. The retraction of the anticipation rejection of these claims is therefore requested.

Claims 1-3, 7, 8 and 10 were also rejected for anticipation by Fiessler (US 2002/0104958).

Amended method claim 1 now recites “monitoring one of an entire area of the protected zone that is transverse to the movement direction and a periphery of the area with an optoelectronic sensor”

Similarly, independent apparatus claim 8 has been amended to recite in relevant parts “a light emitter for illuminating one of an entire area of the opening gap that is transverse to the closing direction and a periphery of the area with a light beam”

As is well illustrated in Fig. 3 of Fiessler, laser beams 22-24 are arranged in vertical alignment with each other on a side of top tool 10. The laser beams form a vertical light grid of rectangular shape with a length equal to the horizontal spacing between photoelectric detector holding means 17 and 18 and the vertical spacing between the upper and lowermost light beams. Such an arrangement is inherently incapable of monitoring either the entire cross-sectional area of the protected zone (that is, an area thereof which is transverse to the movement direction of the tool) or a periphery of that area as required by independent claims 1 and 8.

For at least this reason, independent claims 1 and 8 as well as dependent claims 2, 3, 7 and 10 are not anticipated by Fiessler.

Independent method claim 1 further recites “continuously reducing the size of the protected zone in the movement direction” while independent apparatus claim 8 requires that “the protected zone is continuously reduced in the closing direction”

The Office Action relies on paragraph [0021] of Fiessler as disclosing that the protected zone is reduced in the closing direction. Paragraph [0021] of Fiessler teaches that the photoelectric detector arrangement between top 210 and bottom 211 abruptly stops the closing action of the tools if one of the laser beams 23 and 24 of the photoelectric detectors 19 and 20 is interrupted in the event an object happens to be in the path of the motion. The paragraph further teaches that in order to prevent injuries, the distance between laser beams 23 and 24 should be selected so that anything finding its way into the path of the tool is not trapped or crushed. The paragraph contains no mention that the protected zone is reduced in the closing direction so that

during further relative movements of the tool parts the entire opening gap is within the protected zone.

Fiessler discloses a protective system in the form of a light grid that is similar to DE 101 38 223 discussed in paragraph [0004] of the present application, which has a light grid formed by several individual light beams that are coupled to the movable part. Paragraph [0027] of Fiessler discusses its operation in greater detail as follows:

Initially, the control means 31 moves the top tool at a high speed as far as a position just short of the bottom tool 11 or, respectively, the sheet metal 14 to be worked and then switches over to a slower working speed at which such sheet metal 14 is shaped. The switching over to the slower speed in this case takes place intermediate the top tool 10 and the bottom tool 11 at a position in which the beam 23 has not yet been interrupted by the sheet metal or the bottom tool 11 so that a stop means 32, under the control of the photoelectric detector, will not yet have abruptly arrested the working movement of the top tool at the point in time of switching over to the lower working speed owing to interruption of the light beam 23 or of another light beam.

Paragraph [0027] continues to discuss that the stop means is only activated to arrest movement of the tool under certain conditions when an object interrupts the light beam and the speed of the tool exceeds a certain threshold speed. Paragraph [0028] of Fiessler describes the normal operation of the stop means as follows:

The speed comparison means 34 accordingly causes automatically deactivating the stop means 32 on switching over to the low working speed and it causes it to remain deactivated in the course of the upward displacement of the top tool 10, that is to say, during return movement.

Fiessler does not disclose to continuously reduce the size of the protected zone in the movement direction of the first tool part so that during subsequent closing movements of the first tool parts substantially the entire opening gap is within the protected zone, as is required by independent claims 1 and 8. In paragraph [0034], Fiessler mentions that the stop means 32 can be deactivated for the lowermost laser beam 22 so that, thereafter, interruption of the lowermost laser beam cannot lead to an activation of the stop means 32.

This is at most an incremental reduction of the protected zone. It is not a continuous reduction in the size of the protected zone in the movement direction of the tool as required by independent claims 1 and 8.

For at least this additional reason, claims 1-3, 7, 8 and 10 are not anticipated by Fiessler.

Claims 4-6 were rejected for obviousness over Fiessler in view of Haberer (US 2002/0017603).


These claims are directed to specific features of the present invention which are independently patentable. These claims are further allowable because they depend from allowable parent claim 1.

CONCLUSION

In view of the foregoing, applicants submit that this application is in condition for allowance, and a formal notification to that effect at an early date is requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 273-4730 (direct dial).

Respectfully submitted,


J. Georg Seke
Reg. No. 24,491

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: (415) 576-0200
Fax: (415) 576-0300
JGS:jhw
61364102 v1